

PART III, OPERATING UNIT GROUP 3 PERMIT CONDITIONS

Liquid Effluent Retention Facility & 200 Area Effluent Treatment Facility

Unit Description:

The Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (200 Area ETF) consists of an aqueous waste treatment system that provides treatment, storage integral to the treatment process, and storage of secondary wastes from the treatment process for a variety of aqueous mixed waste. The 200 Area ETF is located in the 200 East Area. Aqueous wastes managed by the 200 Area ETF include process condensate from the LERF and 200 Area ETF and other aqueous waste generated from onsite remediation and waste management activities.

The LERF consists of three lined surface impoundments, or basins. Aqueous waste from LERF is pumped to the 200 Area ETF for treatment in a series of process units, or systems, that remove or destroy essentially all of the dangerous waste constituents. The treated effluent is discharged to a State-Approved Land Disposal Site (SALDS) north of the 200 West Area, under the authority of a Washington State Waste Discharge Permit (Ecology 2000) and [200 Area ETF Delisting \(40 CFR 261, Appendix IX, Table 2\)](#). Construction of the LERF began in 1990. Waste management operations began at LERF in April 1994. Construction of the 200 Area ETF began in 1992. Waste management operations began at 200 Area ETF in November of 1995.

This Chapter provides unit-specific Permit conditions applicable to the dangerous waste management units for LERF and 200 Area ETF.

List of Addenda Specific to Operating Unit Group 3

Addendum A	Part A Form, dated June 20, 2013
Addendum B	Waste Analysis Plan, dated March 31, 2013
Addendum C	Process Information, dated September 30, 2103
Chapter 5.0	Groundwater Monitoring (PNNL-11620 & WHC-SD-EN-AP-024), dated June 30, 2008
Addendum E	Security Requirements, dated, June 30, 2011
Addendum F	Preparedness and Prevention, dated June 20, 2013
Addendum G	Personnel Training, dated June 30, 2012
Addendum H	Closure Plan, dated June 30, 2011
Addendum I	Inspection Requirements, dated September 30, 2013
Addendum J	Contingency Plan, dated March 31, 2012

Definitions

State and federal delisting actions: The state delisting action pursuant to [WAC 173-303-910\(3\)](#), August 8, 2005, and the federal delisting action appearing in [40 CFR 261, Appendix IX](#), Table 2 applicable to the United States, Department of Energy, Richland, Washington.

Acronyms

LERF and 200 Area ETF	200-Area Liquids Processing Facility
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III.3.A COMPLIANCE WITH UNIT-SPECIFIC PERMIT CONDITIONS

III.3.A.1 The Permittees will comply with all Permit Conditions in this Chapter and its Addendums and Chapters with respect to dangerous waste management and dangerous waste management units in LERF and 200 Area ETF, in addition to requirements in Permit Part I and Part II.

III.3.B GENERAL WASTE MANAGEMENT

- III.3.B.1 The Permittees are authorized to accept dangerous and/or mixed waste for treatment in dangerous waste management units that satisfies the waste acceptance criteria in Permit Addendum B according to the waste acceptance procedures in Permit Addendum B. [\[WAC 173-303-300\]](#)
- III.3.B.2 The Permittees are authorized to manage dangerous and/or mixed wastes physically present in the dangerous waste management units in LERF and 200 Area ETF as of the effective date of this Permit according to the requirements of Permit Condition III.15.B.1.
- III.3.B.3 The Permittees are authorized to treat and/or store dangerous/mixed waste in the dangerous waste management units in LERF and 200 Area ETF according to the following requirements:
- III.3.B.3.a The Permittees are authorized to treat, and store as necessary in support of treatment, dangerous waste in the 200 Area ETF tank systems identified in Permit Addendum C, Section C.2, and Section C.4 according to the Permit Conditions of this Chapter.
- III.3.B.3.b The Permittees are authorized to store and treat those dangerous and/or mixed waste identified in Permit Addendum C, Section C.3, in containers according to the requirements of this Chapter. All container management activities pursuant to this Permit Condition will take place within the container storage area or within the 200 Area ETF process area identified in Permit Addendum C, Figure C.3.
- III.3.B.3.c Treatment in containers authorized by Permit Condition III.3.B.3.b is limited to decanting of free liquids, and addition of sorbents to free liquids. The Permittees will ensure that sorbents are compatible with wastes and the containers. Sorbents will be compliant with the requirements of [WAC 173-303-140\(4\)\(b\)\(iv\)](#), incorporated by reference.
- III.3.B.3.d The Permittees are authorized to treat aqueous waste in LERF Basins (Basins 42, 43 and 44) subject to the following requirements:
- III.3.B.3.d.1 Following treatment in a LERF basin, aqueous wastes must be treated in 200 Area ETF according to Permit Conditions III.3.B.3.a through c.; [\[40 CFR 268.4\(2\)\(iii\)\]](#), incorporated by reference by [WAC 173-303-140](#)
- III.3.B.3.d.2 The Permittees must ensure that for each basin, either supernatant is removed on a flow-through basis, to meet the requirement of [40 CFR 268.4\(a\)\(2\)\(ii\)](#) incorporated by reference by [WAC 173-303-140](#), or incoming waste is shown to not contain solids by either: (1) sampling results showing the waste does not contain detectable solids, or (2) filtering through a 10 micron filter; [\[WAC 173-303-815\(2\)\(b\)\(ii\)\]](#)
- III.3.B.4 The Permittees will maintain the physical structure of the LERF and 200 Area ETF as documented in the applicable sections of Permit Addendum C, Section C.2. [\[WAC 173-303-630\(7\), WAC 173-303-640\(3\), WAC 173-303-640\(4\)\]](#)
- III.3.B.5 The Permittees are authorized to use treated effluent for recycle/makeup water purposes at the 200 Area ETF as outlined in Permit Addendum C, Section C.2.5.5, and the letters dated [August 19, 2005, EPA Region 10 to Keith A. Klein](#); and [August 8, 2005, Department of Ecology to Keith A. Klein](#). [\[WAC 173-303-815\(2\)\(b\)\(ii\)\]](#)
- III.3.B.6 The Permittees will maintain and operate systems for the 200 Area ETF documented in Permit Addendum C, Section C.2.5 as necessary for proper operation of the 200 Area ETF, compliance with the conditions of this Permit, and protection of human health and the environment. For purposes of this Permit Condition, the Monitor and Control System documented in Permit Addendum C, Section C.2.5.1, is considered to include all indicators, sensors, transducers, actuators and other control devices connected to but remote from the centralized monitor and control system (MCS) computer.

- 1 III.3.B.7 The Permittees must complete the following requirements prior to acceptance for
2 treatment in 200 Area ETF aqueous waste streams with listed waste numbers subject to
3 the requirements of the State and Federal delisting: [[WAC 173-303-815\(2\)\(b\)\(ii\)](#)]
- 4 III.3.B.7.a The Permittees will prepare a written waste processing strategy according to the
5 requirements of the [State and Federal Delisting Actions Conditions \(1\)\(a\)\(ii\) and \(1\)\(b\)](#),
6 incorporated by reference, and Permit Addendum B, Section B.2.2.2.
- 7 III.3.B.7.b The waste processing strategy required by Permit Condition III.3.B.7.a, must document
8 the proposed processing configuration for the 200 Area ETF, operating conditions for
9 each processing unit, and the expected treated effluent characteristics based on the
10 process model and treatability envelope data required by [State and Federal Delisting](#)
11 [Conditions \(1\)\(a\)\(ii\) and \(1\)\(b\)](#).
- 12 III.3.B.7.c The written waste processing strategy required by Permit Condition III.3.B.7.a must
13 demonstrate that the projected treated effluent characteristics satisfy the delisting
14 exclusion limits in [State and Federal Delisting Condition \(5\)](#) of the state and federal
15 delisting actions, and the discharge limits of the [State Discharge Permit ST-4500](#).
- 16 III.3.B.7.d The Permittees will place a copy of the written waste processing strategy required by
17 Permit Condition III.3.B.7.a in the Hanford Facility Operating Record, LERF and
18 200 Area ETF file as part of the documentation of waste streams accepted for
19 management at the 200 Area ETF.
- 20 III.3.B.8 Treatment of aqueous waste streams in the 200 Area ETF with listed waste numbers that
21 are subject to the requirements of the state and federal delisting actions must comply with
22 the requirements of [State and Federal Delisting Condition \(1\)\(c\)](#), incorporated by
23 reference. [[WAC 173-303-815 \(2\)\(b\)\(ii\)](#)]
- 24 III.3.B.9 The Permittees will manage treated effluent in the final verification tanks according to
25 the requirements of the [State and Federal Delisting Conditions \(3\) and \(5\)](#), incorporated
26 by reference. [[WAC 173-303-815 \(2\)\(b\)\(ii\)](#)]
- 27 III.3.B.10 The Permittees will manage treated effluent from the 200 Area ETF according to the
28 requirements of the [State Waste Discharge Permit ST 4500](#) and [State and Federal](#)
29 [Delisting Condition \(7\)](#). [[WAC 173-303-815\(2\)\(b\)\(ii\)](#)]
- 30 III.3.B.11 The Permittees will ensure compliance with treatment standards ([40 CFR 268](#),
31 incorporated by reference by [WAC 173-303-140](#)) applicable to treated effluent prior to
32 discharge to the State Authorized Land Disposal Site (SALDS), the delisting criteria at
33 [40 CFR 261, Appendix IX](#), Table 2, and the corresponding state-approved delisting
34 (dated August 8, 2005, all incorporated by reference). Sampling and analysis necessary
35 for these demonstrations must meet the corresponding requirements in Permit
36 Addendum B. [[WAC 173-303-140, WAC 173-303-815 \(2\)\(b\)\(ii\)](#)]
- 37 **III.3.C WASTE ANALYSIS**
- 38 III.3.C.1 The Permittees will comply with requirements in Permit Addendum B for sampling and
39 analysis of all dangerous and/or mixed waste required by conditions in this Chapter.
40 [[WAC 173-303-300](#)]
- 41 III.3.C.2 The Permittees will have an accurate and complete waste profile as described in Permit
42 Addendum B, Section B.2.1.2, for every waste stream accepted for management in LERF
43 and 200 Area ETF dangerous waste management units. [[WAC 173-303-380\(1\)\(a\), \(b\)](#)]
- 44 III.3.C.3 The Permittees will place a copy of each waste profile required by Permit
45 Condition III.15.C.2 in the Hanford Facility Operating Record, LERF and 200 Area ETF
46 file required by Permit Condition II.1.2. [[WAC 173-303-380\(1\)\(a\), \(b\)](#)]

III.3.C.4 The Permittees will make a copy of the waste profile required by Permit Condition III.15.C.2 available upon request. [WAC 173-303-380 (1)(a), (b)]

III.3.C.5 Records and results of waste analysis described in this Permit will be maintained in the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.2. [WAC 173-303-380 (1)(a), (b)]

III.3.D RECORDKEEPING AND REPORTING

III.3.D.1 The Permittees will place the following into the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.2:

III.3.D.1.a Records required by WAC 173-303-380 (1)(k), and -(o) incorporated by reference.

III.3.D.1.b Records and results of waste analysis, waste determinations (as required by Subpart CC) and trial tests required by WAC 173-303-300, General waste analysis, and by 40 CFR §264.1034, §264.1063, §264.1083, §265.1034, §265.1063, §265.1084, §268.4(a), and §268.7; [WAC 173-303-310(2)]

III.3.D.1.c An inspection log, summarizing inspections conducted pursuant to Permit Condition III.3.H.1; [WAC 173-303-380(1)(e)]

III.3.D.1.d Records required by the State and Federal Delisting Condition (6), incorporated by reference; [WAC 173-303-815 (2)(b)(ii)]

III.3.E SECURITY

III.3.E.1 The Permittees comply with the Security requirements specific to the LERF and 200 Area ETF in Addendum E and Permit Attachment 3 as required by Permit Condition II.L. [WAC 173-303-310(2)]

III.3.F PREPAREDNESS AND PREVENTION

III.3.F.1 The Permittees will comply with the Preparedness and Prevention requirements specific to LERF and 200 Area ETF in Addendum F. [WAC 173-303-340]

III.3.G CONTINGENCY PLAN

III.3.G.1 The Permittees will comply with Addendum J, Contingency Plan, in addition to the requirements of Permit Condition II.A when applicable. [WAC 173-303-350]

III.3.H INSPECTIONS

III.3.H.1 The Permittees will comply with Addendum I in addition to the requirements of Permit Condition II.X. [WAC 173-303-320]

III.3.I TRAINING PLAN

III.3.I.1 The Permittees will include the training requirements described in Addendum G of this Chapter specific to the dangerous waste management units and waste management activities at LERF and 200 Area ETF into the written training plan required by Permit Condition II.C.

III.3.J GENERAL REQUIREMENTS

III.3.J.1 The Permittees will comply with the requirements of WAC 173-303-395(1), incorporated by reference, for prevention of reaction of ignitable, reactive, or incompatible wastes.

III.3.K CLOSURE

III.3.K.1 The Permittees will close dangerous waste management units in the LERF and 200 Area ETF in accordance with Addendum H, Closure Plan, and Permit Condition II.J. [WAC 173-303-610(3)(a)]

III.3.L POST CLOSURE – RESERVED

III.3.M CRITICAL SYSTEMS – RESERVED

III.3.N RESERVED

III.3.O CONTAINERS

III.3.O.1 Container Storage and Treatment Unit Standards

III.3.O.1.a As part of or in addition to the requirements of Permit Condition III.3.B.2, the Permittees will ensure the integrity of container storage secondary containment and the chemically resistant coating described in Addendum C, Section C.3.4.1 as necessary to ensure any spills or releases to secondary containment do not migrate to the underlying concrete or soils.

III.3.O.1.a.1 Include documentation of any damage and subsequent repairs in the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.2.

III.3.O.2 Container Management Standards

III.3.O.2.a The Permittees will maintain and manage wastes in accordance with the requirements of Addendum C, Section 4.3.2, and Section 4.3.2. [\[WAC 173-303-630\(2\)\]](#)

III.3.O.2.b The Permittees will label containers in accordance with the requirements of Addendum C, Section C.3.2, and Section C.3.3. [\[WAC 173-303-630\(3\)\]](#)

III.3.O.2.c The Permittees will comply with the requirements for managing wastes in containers in [WAC 173-303-630\(5\)](#), incorporated by reference.

III.3.O.2.d The Permittees will ensure wastes are compatible with containers and with other wastes stored or treated in containers within the 200 Area ETF according to the requirements of Addendum C, Section C.3.4.3. [\[WAC 173-303-630\(4\)](#), [WAC 173-303-630\(9\)\]](#)

III.3.O.2.e The Permittees may treat wastes in containers via decanting of free liquids and addition of sorbents. The Permittees may not use addition of sorbents for purposes of changing the treatability group of a waste with respect to the land disposal restriction standards of [40 CFR 268](#), incorporated by reference by [WAC 173-303-140](#).

III.3.O.2.f The Permittees will remove any accumulated liquids from container storage areas in 200 Area ETF according to the requirements of Addendum C, Section C.3.4.2, to ensure containers are not in contact with free liquids and to prevent overflow of the container storage area secondary containment.

III.3.O.2.g The Permittees will comply with the requirements for air emissions from containers in Addendum C, Section C.6.3.2. [\[WAC 173-303-692\]](#)

III.3.P TANK SYSTEMS

III.3.P.1 Tank System Requirements

III.3.P.1.a The Permittees will develop a schedule for conducting integrity assessments (IA). The schedule will meet the requirements of Addendum C, Section C.4.2, and consideration of the factors in [WAC 173-303-640\(2\)\(e\)](#) or [WAC 173-303-640\(3\)\(b\)](#) as applicable:

III.3.P.1.b The Permittees will maintain a copy of the schedule required by Permit Condition III.3.P.1.a, in the Hanford Facility Operating Record, LERF and 200 Area ETF file, and conduct periodic integrity assessments according to the schedule. The Permittees will document results of integrity assessments conducted according to the IA in the Hanford Facility Operating Record, LERF and 200 Area ETF file.

III.3.P.1.c For existing tank systems, if a tank system is found to be leaking, or is unfit for use, the Permittees must follow the requirements of [WAC 173-303-640](#)(7), incorporated by reference. [[WAC 173-303-640](#)(3)(b)]

III.3.P.2 Tank System Operating Requirements

III.3.P.2.a The Permittees will comply with the requirements of [WAC 173-303-640](#)(5)(a), incorporated by reference.

III.3.P.2.b The Permittees will comply with the requirements of Addendum C, Section C.4.5.2. [[WAC 173-303-640](#)(5)(b)]

III.3.P.2.c The Permittees will comply with the requirements of Addendum C, Section C.4.6. [[WAC 173-303-640](#)(5)(d)]

III.3.P.2.d The Permittees will comply with the requirements of [WAC 173-303-640](#)(7), incorporated by reference, in response to spills or leaks from tanks systems at 200 Area ETF. [[WAC 173-303-640](#)(5)(c)]

III.3.P.2.e The Permittees will ensure that the Waste Processing Strategy required by Permit Condition III.3.B.7.a, provides for the immediate treatment or blending of waste accepted for management at the 200 Area ETF such that the resulting waste or mixture is no longer reactive or ignitable when further managed in 200 Area ETF tank systems. [[WAC 173-303-640](#)(9)]

III.3.P.2.f The Permittees will comply with the requirements of [WAC 173-303-640](#)(10), incorporated by reference.

III.3.Q SURFACE IMPOUNDMENTS

III.3.Q.1 The Permittees will maintain the three LERF basins according to the requirements of [WAC 173-303-650](#) (2)(f), incorporated by reference.

III.3.Q.2 The Permittees will operate the LERF basins according to the requirements of Addendum C, Section C.5.3, and Addendum I, Section I.2.2.3.1 to prevent over-topping. [[WAC 173-303-650](#) (2)(c)]

III.3.Q.3 The Permittees will develop and maintain, and operate the LERF basins to ensure that any flow of waste into the impoundment can be immediately shut off in the event of overtopping or liner failure. [[WAC 173-303-650](#) (2)(d)]

III.3.Q.4 The Permittees will comply with the requirements of [WAC 173-303-650](#) (2)(g), incorporated by reference.

III.3.Q.5 The Permittees will comply with the requirements of [WAC 173-303-650](#) (4)(b), incorporated by reference.

III.3.Q.6 The Permittees will comply with the requirements of [WAC 173-303-650](#) (4)(c), incorporated by reference. The certification required by this Permit Condition must be provided to Ecology no later than seven calendar days after the date of the certification. A copy of the certification will be placed in the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.2. [[WAC 173-303-650](#) (4)(c)]

III.3.Q.7 The Permittees will comply with the requirements of [WAC 173-303-650](#)(5)(b), incorporated by reference, in response to events in [WAC 173-303-650](#)(5)(a), incorporated by reference.

III.3.Q.8 The Permittees will comply with the requirements of [WAC 173-303-650](#)(5)(d) for any LERF basin that has been removed from service in accordance with Permit Condition III.3.Q.7 that the Permittees will restore to service. [[WAC 173-303-650](#)(5)(d)]

- 1 III.3.Q.9 The Permittees will close any LERF basin removed from service in accordance with the
2 requirements of Permit Condition III.3.Q.7 or a basin that cannot be repaired or that the
3 Permittees will not to return to service. [[WAC 173-303-650\(5\)\(e\)](#)]
- 4 III.3.Q.10 The Permittees will comply with the requirements of Addendum C, Section C.5.10 with
5 respect to management of ignitable or reactive wastes in the LERF basins.
6 [[WAC 173-303-650\(7\)](#)]
- 7 III.3.Q.11 The Permittees can place incompatible wastes and materials in the same LERF basin only
8 if in compliance with the requirements of [WAC 173-303-395\(1\)\(b\)](#), (c).
9 [[WAC 173-303-650\(8\)](#)]
- 10 III.3.Q.12 The Permittees will use the action leakage rate in Addendum C, Section C.5.8, for
11 operation of LERF basins, and comply with the requirements of
12 [WAC 173-303-650\(10\)\(b\)](#). [[WAC 173-303-650\(10\)](#)]
- 13 III.3.Q.13 The Permittees will comply with the requirements of [WAC 173-303-650\(11\)](#),
14 incorporated by reference.
- 15 III.3.Q.14 The Permittees will comply with the requirements of [40 CFR 264](#), [Subpart CC](#),
16 incorporated by reference by [WAC 173-303-692](#).

17 ~~III.3.Q.15 — Groundwater Monitoring~~

18 ~~III.3.Q.15.a — The Permittees will comply with the requirements of Chapter 5.0. [[WAC 173-303-645](#)]~~

19 **III.3.R GROUNDWATER**

20 III.3.R.1 The Permittees will comply with the requirements of Addendum D, Groundwater
21 Monitoring Plan. [[WAC 173-303-645](#)]

22 III.3.R.2 All wells constructed pursuant to this Permit will be constructed in compliance with
23 Chapter 173-160 WAC.

24 III.3.R.3 Update the Groundwater Monitoring Network

25 III.3.R.3.a The Permittees will install an additional downgradient monitoring well E-26-15 as
26 identified in Addendum D, Groundwater Monitoring Plan by December, 2016.

27 III.3.R.3.b Within 60-days of the well installation, the Permittees will submit a Class 2 Permit
28 modification [[WAC 173-303-830 Appendix I, C.1.a](#)] to update Addendum D and include
29 the additional monitoring well into the groundwater monitoring network.

30 III.3.R.3.c Concurrently with the permit modification request, the Permittees will submit a revised
31 “Liquid Effluent Retention Facility Characterization Report” for the additional
32 monitoring well that includes:

33 III.3.R.3.c.1 -Groundwater sample results from the new well (E-26-15) and the existing wells for all
34 constituents in the Addendum D, Groundwater Monitoring Plan for the Liquid Effluent
35 Retention Facility.

36 III.3.R.3.c.2 Results of evaluating final well development data and drilling logs.

37 III.3.R.3.c.2.a A well use designation (upgradient or downgradient).

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